CLAIMS

1. Applicator apparatus (1) of a shoe cover (2) provided with an insertion opening (3) of a footwear, comprising:

- a supporting frame (5);
- at least one supporting framework (6) of a shoe cover (2) supported by the frame (5),

wherein the supporting framework (6) is shaped so as to hold in a widened condition the insertion opening (3) of a shoe cover (2) peripherally applied on said framework (6); and wherein

the supporting framework (6) is movably supported in said frame (5) between an upper application position of the shoe cover (2) on the framework (6) and a lower release position of the shoe cover (2) peripherally applied thereon.

2. Applicator apparatus (1) according to claim 1, wherein said at least one supporting framework (6) of the shoe cover (2) is angularly movable between said upper application position of the shoe cover (2) and said lower release position of the shoe cover (2).

3. Applicator apparatus (1) according to claim 1, wherein said at least one supporting framework (6) of the shoe cover (2) is substantially ring-shaped.

4. Applicator apparatus (1) according to claim 3, wherein said at least one supporting framework (6) of the shoe cover (2) is substantially fork-shaped and comprises a pair of supporting branches (7, 8).

5. Applicator apparatus (1) according to claim 4, wherein at least a first (7) of said branches (7, 8) is movable from and towards the second branch (8) of the supporting framework (6).

6. Applicator apparatus (1) according to claim 4 or 5, wherein said supporting branches (7, 8) are at least partially made of an elastically deformable material.

7. Applicator apparatus (1) according to claim 5 or 6, wherein the supporting framework (6) is a single piece made of said elastically deformable material.

8. Applicator apparatus (1) according to claim 4 or 5, wherein said supporting branches

(7, 8) are structurally independent from each other.

9. Applicator apparatus (1) according to claim 5, wherein the supporting framework (6) of the shoe cover (2) is provided with spring means (13, 14) adapted to urge said first branch (7) away from the second branch (8) of the supporting framework (6).

10. Applicator apparatus (1) according to any one of claims 4-9, wherein said supporting branches (7, 8) have a curved profile.

11. Applicator apparatus (1) according to any one of claims 4-10, wherein said supporting branches (7, 8) are provided with a radially outer edge (12) adapted to engage with the insertion opening (3) of the shoe cover (2).

12. Applicator apparatus (1) according to claim 2, wherein the application and release positions of the shoe cover (2) are angularly offset from each other of an angle comprised between 60° and 290°.

13. Applicator apparatus (1) according to claim 2, wherein the supporting frame (5) is provided with at least one upright (15) and wherein the supporting framework (6) of the shoe cover (2) can be arranged at said application and release positions of the shoe cover (2) by means of at least one connection arm (16) angularly movable in a plane substantially perpendicular to said at least one upright (15).

14. Applicator apparatus (1) according to claim 13, wherein said connection arm (16) is fixed to a transversal supporting rod (17) extending substantially perpendicular to said at least one upright (15).

15. Applicator apparatus (1) according to claim 14, wherein said transversal supporting rod (17) is rotatably mounted in the frame (5) about a hinging axis (X-X) substantially perpendicular to said at least one upright (15).

16. Applicator apparatus (1) according to claim 15, wherein the transversal supporting rod (17) is mounted between a pair of supporting blocks (18, 19) of a movable element (20) rotatably supported by the frame (5) and wherein said connection arm (16) is connected to the transversal supporting rod (17) by means of one of said blocks (18, 19).

17. Applicator apparatus (1) according to claim 16, wherein said movable element (20) is provided with at least one counterweight (21) adapted to at least partially balance the weight force applied on the connection arm (16) by the supporting framework (6) of the shoe cover (2).

18. Applicator apparatus (1) according to claim 1, further comprising a displacing device (22) of the supporting framework (6) of the shoe cover (2) adapted to arrange the supporting framework (6) at said application and release positions of the shoe cover (2).

19. Applicator apparatus (1) according to claims 13 and 18, wherein said displacing device (22) comprises at least one lever (23) active on the connection arm (16) of the supporting framework (6) and rotatably mounted in the frame (5) about a hinging axis (Y-Y) substantially perpendicular to said at least one upright (15).

20 Applicator apparatus (1) according to claims 15 and 19, wherein said at least one lever (23) is kinematically connected to the connection arm (16) by means of an operating rod (25) connected to said transversal supporting rod (17).

21. Applicator apparatus (1) according to claims 4 and 14, further comprising at least one driving rod (29) extending between the transversal supporting rod (17) and at least a first of the branches (7, 8) of the supporting framework (6) of the shoe cover (2) to move said first branch (7) towards the second branch (8) of the supporting framework (6) at the application position of the shoe cover (2) on the supporting framework (6).

22. Applicator apparatus (1) according to claim 1, wherein the supporting frame (5) is provided at an upper end with a tray (28) for receiving the shoe covers (2) to be worn.

23. Applicator apparatus (1) according to claim 13, wherein the supporting framework (6) of the shoe cover (2) is rotatably articulated to the connection arm (16) about a hinging axis (Z-Z) substantially perpendicular to said arm (16).

24. Applicator apparatus (1) according to claim 14, wherein the connection arm (16) of the supporting framework (6) of the shoe cover (2) is rotatably articulated to the transversal supporting rod (17).

25. Applicator apparatus (1) according to claim 1, comprising a plurality of supporting frameworks (6) of the shoe cover (2) associated to a conveyer device (34) of said supporting frameworks (6) from said application position towards said release position of the shoe cover (2).

26. Applicator apparatus (1) according to claim 25, wherein the supporting frameworks (6) of the shoe cover (2) are pitchwise spaced apart from each other along the conveyer device (34).

27. Applicator apparatus (1) according to claim 25, wherein each of the supporting

frameworks (6) of the shoe cover (2) is associated to a respective transversal supporting rod (17) of a plurality of rods (17) extending substantially perpendicular to said at least one upright (15).

28. Applicator apparatus (1) according to claim 25, wherein the conveyer device (34) of the supporting frameworks (6) comprises at least one moving and supporting element of the frameworks (6).

29. Applicator apparatus (1) according to claim 28, wherein the moving and supporting element of the frameworks (6) is a flexible chain element (37, 38) or belt element (62, 63).

30. Applicator apparatus (1) according to claim 29, wherein the conveyer device (34) of the supporting frameworks (6) further comprises guide means for keeping a front branch of said chain (37, 38) or of said belt (62, 63) in a substantially vertical direction.

31. Applicator apparatus (1) according to claim 27 and 28, wherein the transversal supporting rods (17) of the supporting frameworks (6) of the shoe cover (2) extend between two moving and supporting elements of the frameworks (6) of the conveyer device (34).

32. Applicator apparatus (1) according to claim 29, wherein the conveyer device (34) of the supporting frameworks (6) further comprises:

i) at least a first pair of coaxial upper gear wheels (39, 40), rotatably supported by the supporting frame (5) along a first hinging axis transversely extending with respect to said at least one upright (15) at an upper end of the frame (5);

ii) at least a second pair of coaxial lower gear wheels (40, 41), rotatably supported by the supporting frame (5) along a second hinging axis transversely extending with respect to said at least one upright (15) at a lower end of the frame (5); and

iii) a pair of flexible moving and supporting elements of the frameworks (6), each element being adapted to engage a respective gear wheel (39, 41; 40, 42) of said first (39, 40) and said second (41, 42) pair of wheels.

33. Applicator apparatus (1) according to claim 25, wherein the conveyer device (34) of the supporting frameworks (6) comprises at least one actuator (56) adapted to move the supporting frameworks (6) from said application position towards said release position of the shoe cover (2).

34. Applicator apparatus (1) according to claims 27 and 33, wherein the actuator (56) of the conveyer device (34) of the supporting frameworks (6) comprises at least one operating lever (45, 46) active on each of said transversal supporting rods (17) by means of a ratchet device (47).

35. Applicator apparatus (1) according to claim 34, wherein the ratchet device (47) is provided with a pawl (48) and with spring means (49) adapted to urge said pawl (48) towards said transversal supporting rod (17).

36. Applicator apparatus (1) according to claim 34 or 35, wherein the actuator (56) of the conveyer device (34) of the supporting frameworks (6) comprises a pair of operating levers (45, 46) accessible at opposite sides of the supporting frame (5).

37. Applicator apparatus (1) according to claim 34 or 35, further comprising stop means (50, 51) adapted to limit the angular displacement of said at least one lever (45, 46) of the actuator (56) of the conveyer device (34) of the supporting frameworks (6).

38. Applicator apparatus (1) according to claim 34, wherein the conveyer device (34) of the supporting frameworks (6) is provided with spring means (57) active on said at least one operating lever (45, 46) to hold said lever (45, 46) at a rest position in which said ratchet device (47) is in engagement with one of said transversal supporting rods (17).

39. Applicator apparatus (1) according to claim 25, further comprising guide means (52) adapted to hold in a raised condition each supporting framework (6) of said plurality of frameworks (6) upstream of said release position of the shoe cover (2).

40. Applicator apparatus (1) according to claim 39, wherein said guide means (52) comprises a rail (53) supported by the supporting frame (5) and extending along a direction substantially parallel to said at least one upright (15).

41. Applicator apparatus (1) according to claim 40, wherein said rail (53) is provided with a sliding track (54) adapted to cooperate in abutment relationship with a transversal rod (55) laterally fixed to the connection arm (16) of the supporting framework (6).

42. Applicator apparatus (1) according to claim 40, wherein said rail (53) is provided with a substantially hook-shaped lower portion (53a) to allow an angular displacement of predetermined value of each of said supporting frameworks (6) towards said release position of the shoe cover (2).

43. Applicator apparatus (1) according to claim 41 and 42, wherein said rail (53) is

provided with a stop plate (58) fixed to said substantially hook-shaped lower portion (53a) and adapted to cooperate in abutment relationship with said transversal rod (55) to hold said supporting framework (6) at the release position of the shoe cover (2).

44. Applicator apparatus (1) according to claim 43, wherein said stop plate (58) is coated on top with an anti-friction material.

45. Applicator apparatus (1) according to claim 25, wherein the supporting framework (6) of the shoe cover (2) is rotatably mounted on the conveyer device (34).

46. Applicator apparatus (1) according to claim 45, wherein the supporting framework (6) of the shoe cover (2) is rotatably mounted on the conveyer device (34) by means of a connection arm (16) hinged to the conveyer device (34) about a hinging axis (B-B) substantially perpendicular to said at least one upright (15).

47. Applicator apparatus (1) according to claim 46, wherein the supporting framework (6) of the shoe cover (2) is rotatably articulated to the connection arm (16) about a hinging axis (Z-Z) substantially perpendicular to said arm (16).

48. Applicator apparatus (1) according to claim 27, wherein the supporting framework (6) of the shoe cover (2) is rotatably mounted idly on said transversal supporting rod (17).

49. Applicator apparatus (1) according to claim 32 and 48, wherein the conveyer device (34) comprises a third pair of gear wheels (60, 61) coaxially mounted on the frame (5) along a hinging axis parallel to, or substantially coinciding with, the longitudinal axis of the transversal supporting rod (17) in the release position of the shoe cover (2).

50. Applicator apparatus (1) according to claim 25, further comprising at least one raising device (67) adapted to engage the supporting framework (6) of the shoe cover (2) arranged in said upper application position of the shoe cover (2).

51. Applicator apparatus (1) according to claim 50, wherein said raising device (67) comprises a lever (68) rotatably supported by said at least one upright (15) and provided with a first end (68a) adapted to engage an outer branch (8) of the supporting framework (6) to raise said framework (6) by rotating said lever (68).

52. Applicator apparatus (1) according to claims 11 and 51, wherein said first end (68a) of the lever (68) is provided with a grooved roller (69) adapted to engage the radially outer edge (12) of the outer branch (8) of the supporting framework (6).

53. Applicator apparatus (1) according to claim 39, wherein said guide means (52) comprises a tilting door (70) rotatably supported by the frame (5) at the lower release position of the shoe cover (2).

54. Applicator apparatus (1) according to claims 48 and 53, further comprising at least one driving device (71) of the tilting door (70) adapted to lift said door (70) when said conveyer device (34) of the supporting frameworks (6) is operated.

55. Applicator apparatus (1) according to claim 54, wherein said driving device (71) comprises a shaped operating lever (72) rotated by the conveyer device (34) and provided with an operating rod (73) kinematically connected to the tilting door (70) to lift said door (70) when said conveyer device (34) is operated.

56. Applicator apparatus (1) according to claim 54, wherein said driving device (71) comprises spring means (74) active on said shaped operating lever (72) to lower said door (70) when said supporting framework (6) is in the lower release position of the shoe cover (2).

57. Applicator apparatus (1) according to claim 1, further comprising a protective casing (33) supported by said frame (5).

58. Applicator apparatus (1) according to claim 57, wherein said protective casing (33) is provided with a removable cover (59) to gain access to the supporting framework (6) of the shoe cover (2) in said upper application position.